Appendix L

USFWS

Controlled burning on the Conte Refuge

Fire Management Guidance

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Introduction

The U.S. Fish and Wildlife Service's (Service) Northeast Regional Fire Program (Fire Program) helps support the mission of the National Wildlife Refuge System (Refuge System) by creating and managing important wildlife habitat using prescribed fire, and protecting human safety by reducing the risk of wildfire through fire suppression. This appendix outlines guidance for fire management, explains the fire management planning process, and describes the current fire management program at Silvio O. Conte National Fish and Wildlife Refuge (Conte Refuge).

There were no wildfires (unplanned, human-caused ignitions) on refuge ownership since the Service acquired lands. The only recent fire history for the Conte Refuge was adjacent to the Nulhegan Basin Division in Essex County, Vermont. From 1991 to 2000, there were 24 wildfires were suppressed within the county. Only four of these were lightning-caused; the majority of the other human-caused wildfires were from escaped debris burns.

At the Nulhegan Basin Division, five mechanical treatments (thinning and brush clearing) to modify fuels were completed between 2002 and 2008. These treatments were to provide better access to refuge resources and assets by opening or maintaining roads and trails and to provide "defensible space" around several of the cabins by reducing and removing flammable vegetation. Overall, hazardous fuels were removed on 200 acres.

The Role of Fire

In pre-settlement forests of northern New England–unlike other forest types across the country–wildfire was not a common ecological disturbance (Day 1953, Lorimer 1977, Cogbill et al. 2002). It has been estimated that low intensity surface fire crept through northern hardwood forest types every 600 years, with more severe burning fire having a very long return interval of 3,000 years (Bonnicksen 2000). Conifer types (the great spruce-fir forests in New England had a 200- to 400-year return interval or longer (Lorimer 1977, Pyne 1997, Bonnicksen 2000). Even so, small-scale, more frequent, disturbances along with fire did occur thus creating a mosaic of forest conditions (Lorimer 1977, Bouchard et al. 2007).

Historically, natural fire and ignitions by Native American people played an important disturbance role in many ecosystems by:

- Removing fuel accumulations.
- Decreasing the impacts of insects and diseases.
- Stimulating regeneration of vegetation.
- Cycling nutrients.
- Providing a diversity of habitats for plants and wildlife.

With large-scale commercial logging (1850 to early 1900s) and the advent of the steam locomotive that made it easier to ship wood products from New England, several catastrophic wildfires occurred from excessive and unnatural fuel loading (logging slash) laying on the ground (Pyne 1997). There were no organized suppression organizations to fight these early fires until the turn of the 20th century when states recognized the need for suppression resources, detection services, and fire patrols during peak burning conditions. Other disturbances, such as spruce budworm outbreaks, also contributed.

With the end of the logging era in the early 20th century, wildfire occurrence in the Northeast showed a marked decline. Wildfire occurrence continues to remain low because of greater access (i.e., greater number of roads) allowing for quicker response, modernized suppression equipment, regulations prohibiting the illegal kindling of wildland fire (i.e., illegal wildfires), and climatic conditions not conducive to large fire growth. Wildfire return intervals have returned to a more natural or historic state becoming a concern only under severe drought conditions and then usually short-lived.

Wildfire, in the form of prescribed fire or commonly called "controlled burning," does have a role within New England as an ecological disturbance factor. When used properly, and in conjunction with other management tools (mechanical manipulation of vegetation), it can:

- Reduce hazardous fuels build-up in both wildland-urban interface[1] and other areas.
- Improve wildlife habitats by reducing the density of vegetation, and/or changing plant species composition.
- Sustain and increase biodiversity.
- Improve woodlands and shrublands by influencing plant density.
- Reduce the susceptibility of plants to insect and disease outbreaks.
- Assist in the control of invasive and noxious species.

Wildland Fire and Management Policy and Guidance

In 2001, the Secretaries of the Interior and Agriculture approved an update to the 1995 Federal Fire Policy. The 2001 Federal Wildland Fire Management Policy directs Federal agencies to achieve a balance between using fire suppression to protect life, property, and resources, and using wildland fire to regulate fuels and maintain healthy ecosystems (*http://www.nwcg.gov/branches/ppm/fpc/archives/fire_policy/history/index.htm;* accessed April 2013). It also directs agencies to establish a unified and cohesive fire management policy for all Federal agencies and to work together to implement this policy. Agencies will provide a management response to all wildfires that is commensurate with the values at risk, human safety, and the costs for suppression. This policy provides nine guiding principles that are fundamental to the success of the fire management program. These guiding principles are as follows:

1. Firefighter and public safety is the first priority in every fire management activity.
2. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into all land management planning processes.
3. Fire management plans, programs, and activities support land and resource management plans and their implementation.
4. Sound risk management is a foundation for all fire management activities.
5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
6. Fire management plans and activities are based upon the best available science.
7. Fire management plans and activities incorporate public health and environmental quality considerations.
8. Federal, State, Tribal, local, interagency, and international coordination and cooperation are essential.
9. Standardization of policies and procedures among federal agencies is an ongoing objective.

The following provides further direction for fire management decisions:

- Every wildfire requires a response and decision on how to respond to it.
- The Service's initial reaction to human caused fires will be to suppress the fire while providing for firefighter and public safety, limiting damage and loss, and minimizing costs of the fire.

[1] The wildland-urban interface is the line, area, or zone where human development and structures meet with undeveloped wildland or vegetative fuels.

- The interagency nature of fire management work requires the involvement and participation of cooperators, including both State and local agencies, in planning for, and responding to, wildfire.

The Service's Fire Management Handbook provides standards for operational fire management activities, procedures, and practices based upon interagency, Departmental, and Service policies (*http://www.fws.gov/fire/handbook/index.shtml;* accessed April 2013). The Fire Management Handbook is updated annually to coincide with the Interagency Standards for Fire and Fire Aviation Operations Handbook and is incorporated by reference into the Service Manual (621 FW 1).

Fire Management Planning

In 2004, refuge staff developed Fire Management Plans (FMP) for the Nulhegan Basin and Pondicherry Divisions. A FMP defines the fire management direction based on the objectives outlined in the Comprehensive Conservation Plan (CCP) and Habitat Management Plans (HMP) when developed. A FMP follows the most recent Interagency Fire Management Plan Template (April 2009) and applies the most recent Service-specific guidance on use of that interagency template. Once the CCP and subsequent HMP are completed, we will update the FMP to cover all refuge units and divisions. Once approved, the FMP will provide a detailed description of how the refuge will:

- Respond to wildland fires.
- Manage fuels to reduce the risk of wildland fires.
- Use prescribed burning to meet management objectives, if applicable.

In order for a refuge to use wildland fire, prescribed burning, and other hazardous fuel reduction techniques, these methods must be specified within the approved refuge's FMP, based on step-down direction from the CCP and any HMPs. If none of these methods are described in the FMP, the refuge's only allowable response to wildland fire is an aggressive suppression response, with full control of a wildfire as quickly, safely, and cost effectively as possible. For all wildfires, only the safest tactical responses are considered.

The shelf-life of the FMP matches the 15-year life of a CCP. However, the refuge manager and zone fire management officer must annually review the FMP, discuss and update FMP sections as needed, and complete an amendment containing any updates. Any significant changes, such as change in policy or refuge management direction, or additional land acquired, may warrant a complete rewriting of the plan.

Fire Management Program at Conte Refuge

Management Direction

The current management direction only allows for wildfire suppression across all divisions of Conte Refuge. Guidance in the Nulhegan FMP allows for fuel reduction projects by mechanical methods only. This would include roadside thinning, clearing, or brush removal, reducing dead and dead surface fuels by chipping or biomass removal, and vegetation projects that that creates defensible space around structures. Once passed CCP/EIS direction, along with any future HMP direction will be incorporated into the draft FMP, submitted for public review and NEPA compliance.

Fire Management Goals

The goals and strategies of the Refuge System's Wildland Fire Management Program Strategic Plan are consistent with Department of Interior's National Fire Plan direction, the President's Healthy Forest Initiative, the 10-year Comprehensive Strategy and Implementation Plan, National Wildfire Coordinating Group Guidelines, initiatives of the Wildland Fire Leadership Council, Cohesive Strategy and Interagency Standards for Fire and Aviation operations.

In addition to wildfire suppression, proposed management goals for the refuge are to use prescribed fire to meet the habitat goals and objectives identified in this CCP and to protect refuge resources through treatment

of hazard fuel accumulations by mechanical and prescribed fire as treatment methods. After the CCP is complete, refuge staff will develop habitat management plans for each refuge division and unit that will include more details on the specific treatment areas and techniques.

Fire Management Objectives

The purpose of the fire management program will be to use prescribed fire, chemical, and manual and mechanical treatment to:

- Ensure public and firefighter safety remain the highest priority while protecting property and natural resource values from wildland (wildfire and prescribed) fire.
- Reduce harmful wildfire impacts to all resource management activities. This can be accomplished in part by reducing the excessive accumulations of hazardous fuel loads in woodland habitats with high resource values (e.g., protecting mature, closed-canopy late successional habitat, that provides cover, den and rearing qualities needed for Canada lynx recovery efforts) or reduce activity generated slash from proposed logging treatments.
- Provide for the enhancement and protection of critical habitat for State and federally endangered or threatened species, as well as other species of special concern.
- Provide, maintain, enhance, and protect nesting, brooding, feeding, and resting habitat that meet the requirements of migratory birds and resident wildlife.
- Facilitate the control of invasive and exotic species.
- Increase habitat diversity in refuge upland habitats.
- Demonstrate to, and educate the public about the role and benefits of wildland fire protection and prescribed fire use in natural resource management.
- Maintain current ecosystem diversity within the landscape context
- Comply with State Air Quality Implementation Plans to protect public respiratory health and the environment.

Fire Management Strategies

The refuge will use a combination of fire management strategies, tactics, and tools that consider public and firefighter safety, as well as resource values at risk. Based on the CCP and habitat management direction, the FMP will provide a more detailed description of the wildfire suppression, prescribed fire, chemical, manual, and mechanical treatment methods Conte Refuge may use. The FMP will also explain the timing and monitoring of the refuge's fire management strategies. As needed, the refuge will develop prescribed fire burn plans for specific sites, following the latest version of Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide.

Some fire management strategies, such as prescribed burning, may impact air quality. Wildland fire temporarily reduces air quality by diminishing visibility and releasing particulates and pollutants through combustion. By regulation and policy, wildfire events are an exemption (an uncontrolled, unwanted event not planned for). Conte Refige will meet national ambient air quality standards set forth in the Clean Air Act and where applicable, adhering to various State Air Quality Implementation Plans during all prescribed fire activities.

Fire Management Organization, Contracts, and Cooperation

The Service's Northeast Regional Fire Program is divided into four fire management zones which provide technical fire management oversight to refuges. Conte Refige is within the New England fire management zone, which includes all the national wildlife refuges and fish hatcheries within the New England states. There is no dedicated fire staffing currently assigned to Conte Refige. The fire management zone is served by the zone fire management officer (Zone FMO) based at Rhode Island NWR Complex. All fire management

activities are conducted in a coordinated and collaborative manner within the New England zone in order to share fire qualified individuals and equipment. This also includes our Federal, State, and local fire departments and private partners, such as The Nature Conservancy.

Upon approval of this CCP, any step-down direction, such as a habitat management plan, or decisions based on emergency protection, where dangerous fuel conditions pose undo risks, a new FMP may be necessary and developed for Conte Refige, inclusive of all its divisions.

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